Statement

- Keyland Laser Technology Co.,Ltd reserves the right to modify the products in this manual and product specifications document without prior notice.

- Keyland Laser Technology Co.,Ltd does not assume caused by improper use of the manual or the product directly, indirectly, incidentally or consequential loss or liability.

- Keyland Laser Technology Co.,Ltd has the products and software patents, copyright and other intellectual property rights. Unauthorized and shall not directly or indirectly copy, manufacture, processing, use of this product and its associated parts

- This product is designed and manufactured for general industrial applications than expected and the use of human life or property caused by the significant impact is not the scope of services

- Keyland to ensure that: all "Gosun and keylandr" brand products will improve service to the Company

Preface

Thank you for trust on Keyland Laser technology Co.,Ltd., welcome to use our products!

Please read this user manual before using the product.This manual provides detailed information for use firstly of this product relevant security matters, the installation, describes the function , operation of the various components, the routine maintenance necessary for the good condition of this product, and lists the fault finding methods, techniques, support files, and more important content.

If you have any questions about the product or have any problems when using this product, please contact us, our technical team will be ready to provide you with professional support and advice. Please contace

JiangSu Keyland Laser Technology Co., Ltd. and service center

24-hour toll-free Hotline :400-6263-601

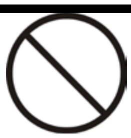
In order to ensure safe operation and best performance, please follow these warnings and pay attention to other matters, as well as the manual to operate.

- "Dangerous" and "warning" symbol are marked in accordance with the extent of the risk of accident.

 危 险	**Indicates a potentially hazardous situation , if not avoided, may result in death or serious injury**

 警 告	**Indicates a potentially hazardous situation if not avoided, Will result in minor or moderate injury or material damage**

- The following symbols indicate which is prohibited must comply with

	**This flag indicates the operation of the "ban"**

	**This flag indicates that the operation should be noted that**

Finally, Please pay attention to the following matters:

- **Before power to the product, be sure to fully understand contain in this manual on the safe operation of the laser and maintenance of the Note**
- **If this manual does not mention, please not to adjust or modify the product or its components, otherwise it may result in hazardous laser**

radiation.

Contents

1. Security

1.1 Basic information

- The staff , who can be authorized after the relevant training and fully understand the necessary safety procedures, can operate this laser productcan

- Please allow only authorized person close to the laser product, set the appropriate warning signs.

- Please observe the safety regulations of the local device.

1.2 Optical Security

- This laser products output more than 60W/80W/100W (according to different models) infrared laser radiation at 10.6 µm wavelength range. Avoid eye and skin exposure to the laser output directly to the issue or scattering the radiation. The laser may cause the following incidents: (1) ignite surrounding combustibles; (2) the processing of different objects may produce other radioactive and toxic and harmful gases.

- The optical path from second to third mirror without any protection, **Please do not into this optical path for your any body part in order not to cause harm during engraving & cutting and debugging.**

- Laser processing may be at risk ,should be carefully considered by the processing object, is suitable for laser operation. .

- Prohibited any irrelevant total reflection or diffuse reflection object placed in the device, to prevent the laser reflector to the human body or inflammable materials.

- Should wear the appropriate laser protective eyewear, the laser wavelength of the laser protective eyewear should be issued to match.



Do not allow direct view of the main beam or the reflected laser beam ,Even in the case of wear laser safety glasses - can lead to blindness

- Objects against the mirror into the laser radiation zone, to prevent due to the

specular reflection of accidental damage to the human eye or the human body.

- Strongly recommended that the laser output port do not point to the entrance or windows of the room when the product is placed
- "Beware of the laser, do not close" words of warning signs should be set to equipment workplace door or near the work area

	**May lead to the occurrence of fires and other accidents**

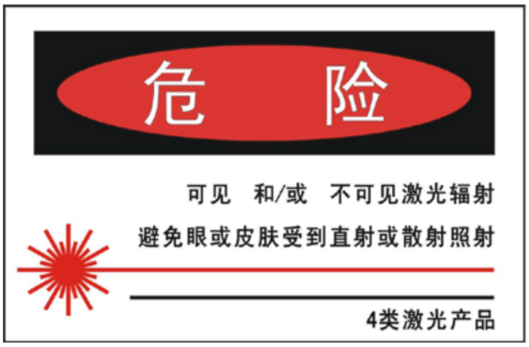
- Avoid inflammable and explosive materials into the direct laser radiation zone

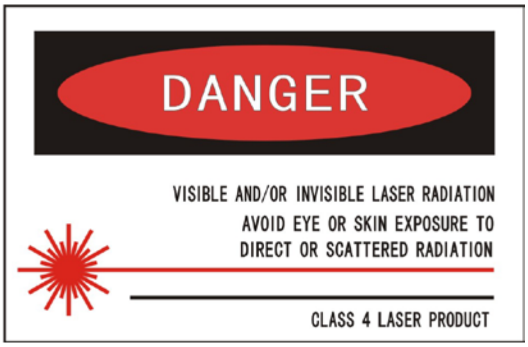
- Prohibits any person is free to adjust the optical system,even in shutdown,except with the permission or authorization of the Company
- Security identity and location





Paste in the laser output head





Paste on the laser front

1.3 Electrical safety

警 告	**This device contains a fatal DC and AC voltage, even if powered off** **This danger may still exist for some time**

- This product must be in the specified electrical conditions.
- Connect the power line and ensure that the circuit wiring is correct.
- When the normal operation of equipment does not exist electrical hazards, and ensure proper grounding well.
- When the equipment is not in use, should remove the key from key switch to prevent unauthorized use.
- When fault alarm sound or light, should be shut down and then check troubleshooting in order to boot again.
- During the laser tube rupture and laser power damage may occur due to a serious fault, must immediately press the emergency stop button or cut off the total power.
- When meet abnormal situation, you should immediately stop work, cut off the power, then please consult us.
- Power supply is suddenly interrupted a great influence on the laser, make sure to provide a continuous and stable power supply. To avoid the sudden change in voltage caused by the equipment, electrical circuits, burned.It is recommended that every single installation of more than 2000W power supply regulator

	Such labels is very important to the safe operation, prohibit demolition. **Any missing or defective, please contact us for spare parts**

- Avoid to boot work in thunder and lightning

⃠	**Prohibit unauthorized adjustment, demolition, replacement in Unauthorized condition.** **Doing so may result in injury or equipment damage**

- Humidity too high cause high-pressure laser discharge, endangering personal safety, will cause damage to the laser power

- Must ensure that there is sufficient space and airflow

- When the cooling water temperature is greater than the maximum allowable value of 30 ° C, the laser energy output will decline rapidly; when the cooling water temperature is less than the minimum allowed value to 0 ° C will cause the cooling water freezes in the laser tube, resulting in the laser tube rupture.
- Replacement of wearing parts, the relevant requirements of this manual power-off operation must be maintained by a professional.

1.4 Equipment safety standards

This product is designed to the following national standards:

- GB of 18217-2000 - laser safety signs
- GB 7247.1-2001 - Radiation Safety of Laser Products, Equipment Classification, Requirements and User's Guide
- GB 10.32 thousand -1995 - laser equipment and facilities of the electrical safety
- GB / T 5226.1-1996 - Electrical equipment of industrial machinery - Part 1: General technical conditions

2. Overview

2.1 Introduction

The 1390 series laser cutting machine is widely used in non-metallic materials cutting (such as acrylic, leather, cloth, etc.). The machine adopts the glass tube of carbon dioxide laser as the light source, computer-controlled two-dimensional platform for various pre-set graphics track precise movements. Laser of the model set, automatic control, precision machinery, computer control software, and other high-tech one, with high-tech, high cost performance characteristics.

The series of models in the optical system, control system has first-class core technology, the speed, precision cutting close to the performance of similar foreign products, with high practicality.

2.1.1 Character

1, CO2 light source of laser equipment, optical power according to current regulation, the scope can be applied to the need for cutting different material thickness. Advantage of its excellent processing performance through the use of non-contact processing, will not damage the workpiece, the processing quality has been greatly improved.

2, Two-dimensional table using the motor-driven two-tier structure, 17 rotary encoders for precision motion control, PW closed-loop control mode, the system

resolution up to 0.02mm.

3, The flying opticsoptical systems, processing large format; device on three sides to take the open design of convenient material.

4.Support a variety of general-purpose graphics software to generate PLT, BMP (1 bit) and DXF file formats, can produce a variety of graphics, text, graphic, specification.

5, Current international popular modular electrical design, the whole has a good stability of the continuous work, the High cutting speed, high positioning accuracy, operation and maintenance simple and convenient advantages.

6, Using special laser cutting software, feature-rich, friendly interface, simple operation.

7, Using a mixture of vector and lattice work pattern, cutting work can be completed on the same page.

2.1.2 Application

1, cutting materials:

Rubber sheets, organic board, plastic sheets, acrylic, color plates, plywood, wood, marble, tiles, fireproof board, insulation board, cardboard, leather, leather, fabric, emery cloth, sandpaper and other non-metallic materials.

2.Applications and service

Packaging and printing (corrugated boxes, bags), model (construction, aviation, marine), billboards, handicrafts, decorative plates, printing templates, footwear garment template, cutting board, light box panels and so on.

2.2 Operating principle and parameters

- Operating principle

Laser power to produce instant high pressure (about 20 000 volts) excitation laser within the carbon dioxide gas to stimulate the flow of particles in the laser

tube resonator oscillation, and outputs a continuous laser wave . Computer engraving and cutting procedures control the table for the corresponding motion on the one hand,and control the laser output on the other hand ;the output of the laser reflection, focusing, non-metallic surface to form a high density spot, instant gasification material surface, and then to blow away by certain pressure from the gasification of plasma objects formed kerf, in order to achieve the purpose of laser cutting.

- Parameter

Laser wavelength	10.6 μm	Cutting speed	≥6000mm/min
Laser	Sealed CO2Leaser	(The cutting speed will slow down according to the material thickness）	
Working scope	1000×600mm	Max output of laser	80W
Cutting depth	≤20mm	Laser energy adjustment	0～100% Manual automatic (software setting)
Cutting line width	≤0.5mm	Cooling way	Circulating water cooling
Cooling water temperature	5℃～30℃	Power	110V/60Hz/2KW

2.3 System structure

The 1390 series laser cutting machine from the operator panel, cabinet, laser, working platform, constant temperature water-cooled machines, negative pressure vacuum fans and other systems

2.3.1 Appearance

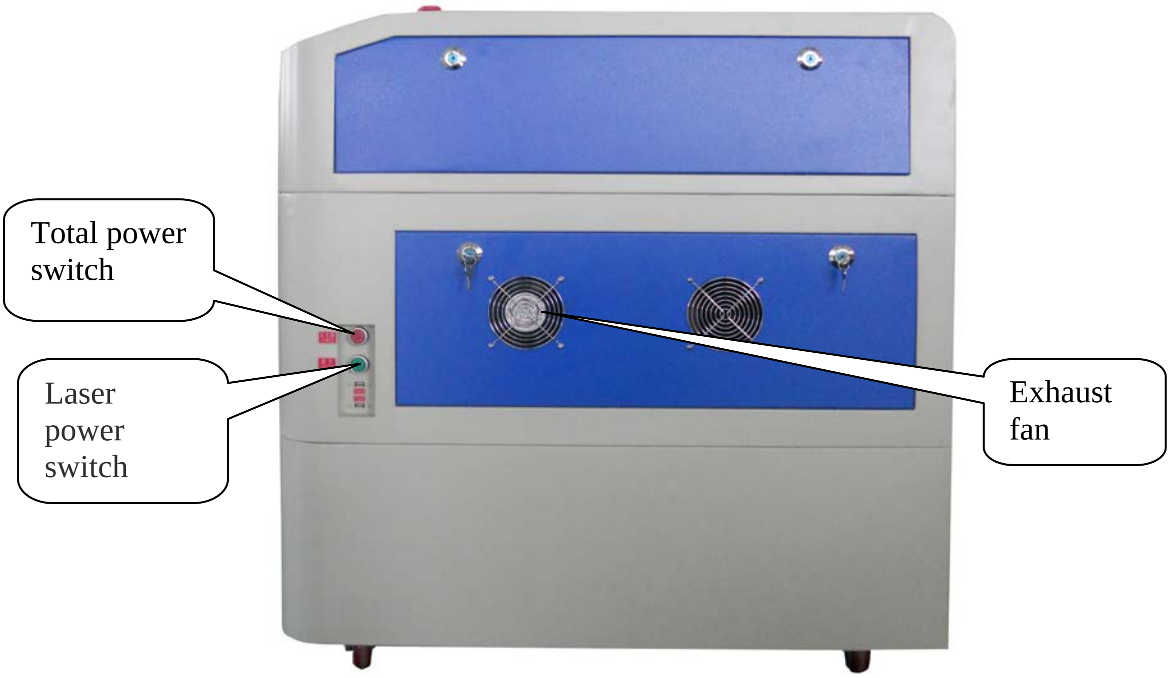
Front machine



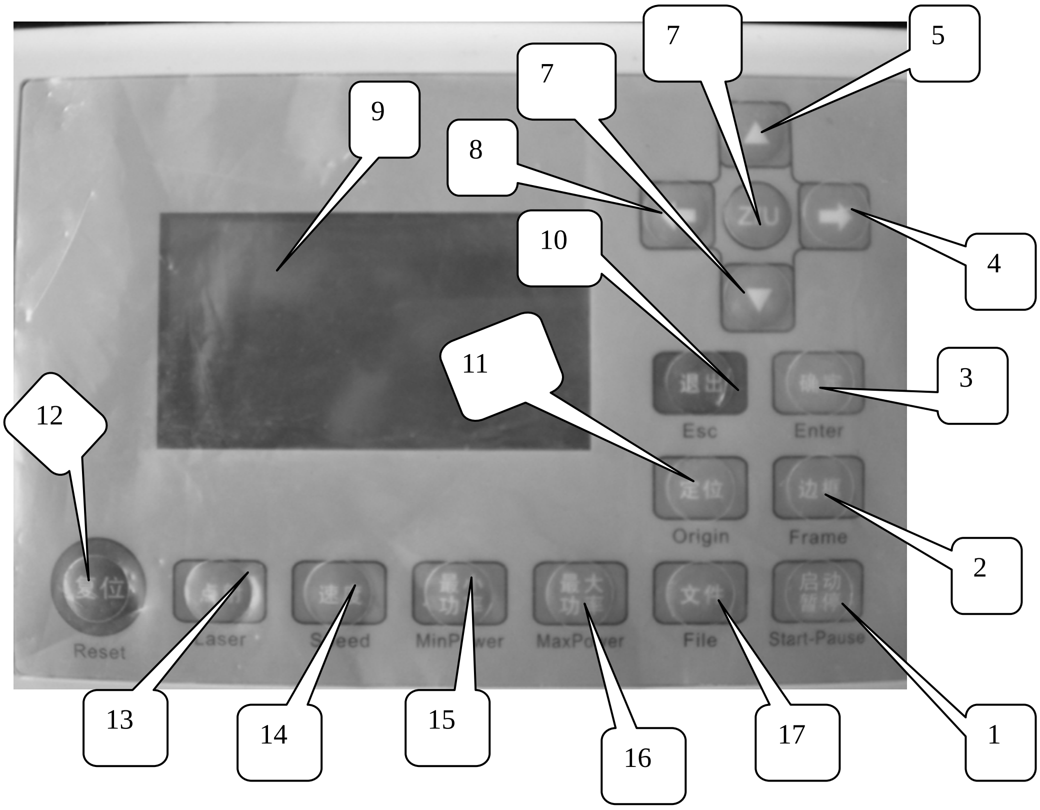
Back of machine



Side of machine

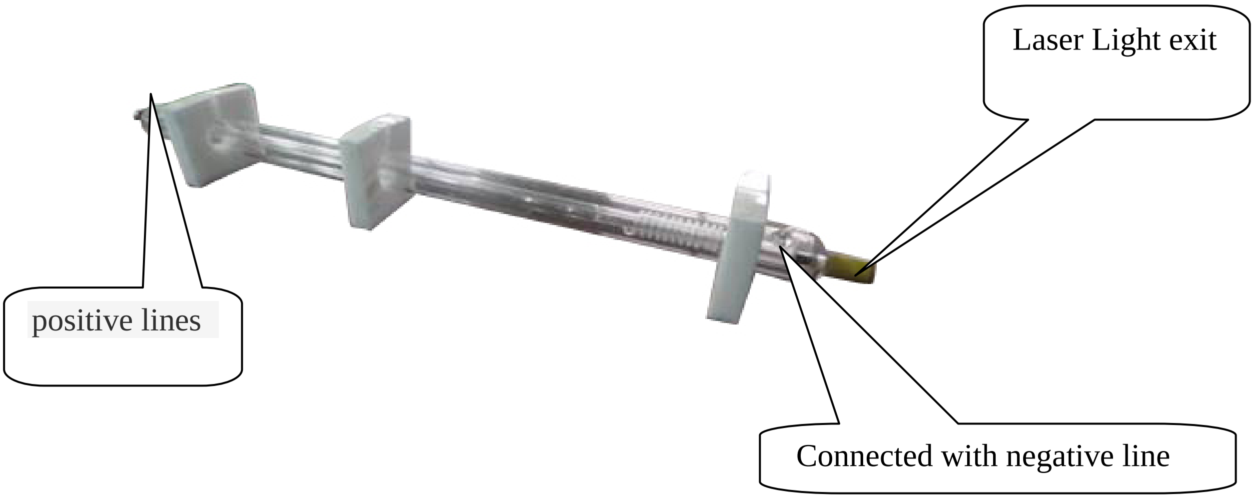


2.3.2 Main-operation-contro-panel

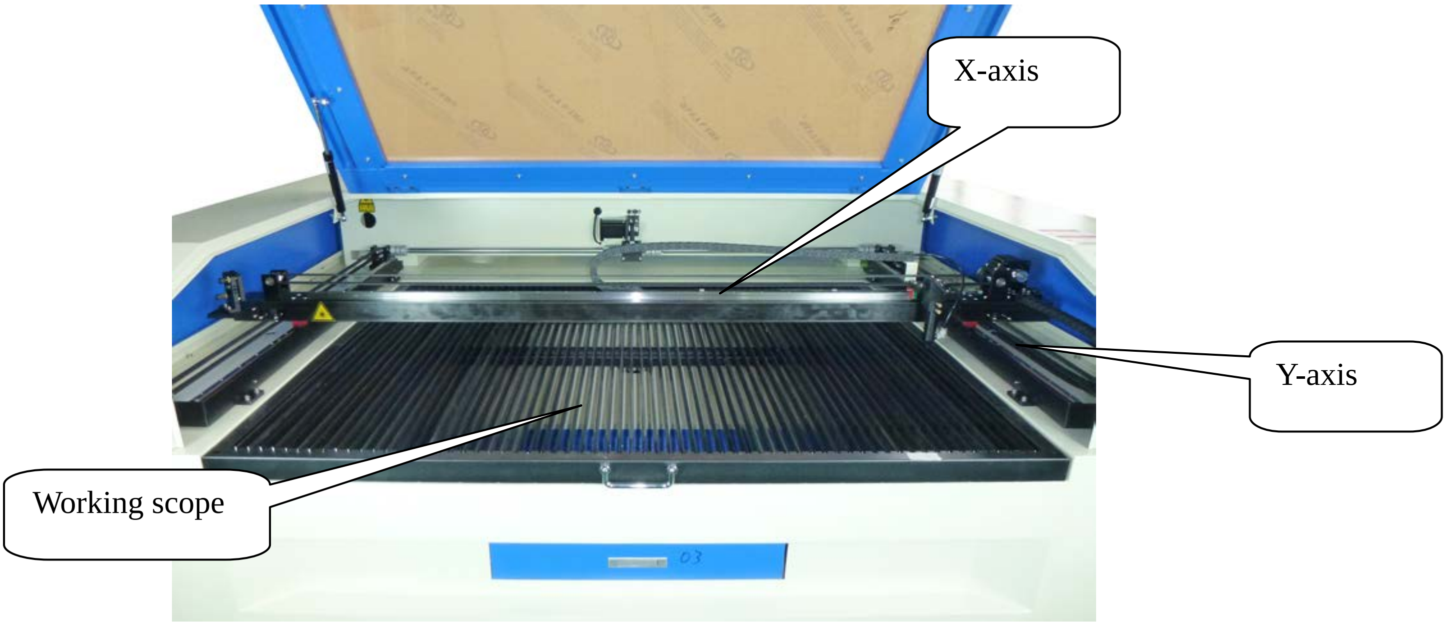


1 Start/Pause 2 Frame 3 Enter 4 Turn Right 5 Upwards 6 Z/U 7 Downwards 8 Turn Left 9 Screen 10 Esc 11 Origin 12 Reset 13 Laser 14Speed 15 MiniPower 16Max.power 17 File

2.3.3 CO2 Laser



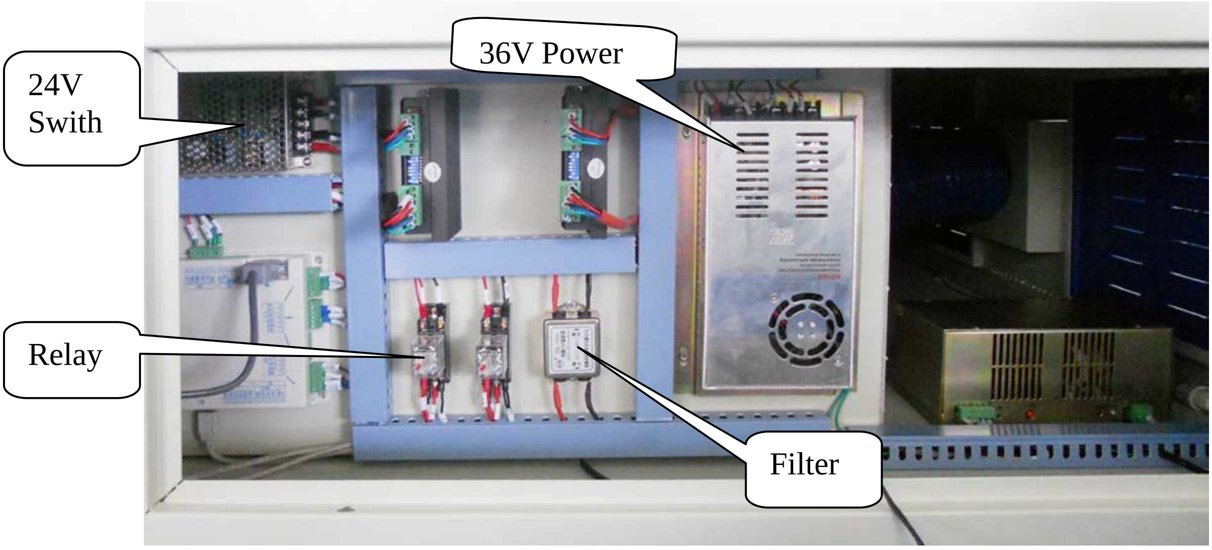
2.3.7 Working platform



2.3.5 Thermostatic water-cooled machine



2.3.6 Electronic control board



2.3.7 Negative pressure vacuum fan



3 Installation &adjustment and workflow

3.1 Opening inspection

After opening the package, please check carefully : The appearance of equipment is in good condition; inventory of products and accessories are complete according depending to device packing list. If you find a product model does not match, or damaged, and missing accessories, do not use and contact us promptly

3.2 Preparation before installation and adjustment

- Tool: more than 1 ton forklift (Convenient discharge), 12 "or 15" adjustable wrench, multimeter, a vernier caliper.
- Material: Acrylic board, an insulation tape,(1 Volume for spare), 1 roll of scotch tape.
- The staff: 3 to 4 people for installation
- Equipment operators: Can use computer operation.

3.3 Venues and supporting facilities

- The ground flat, not easy dust ,away from the vibration source and strong electromagnetic interference. The best to have relatively independent of closed rooms, clean, little dust with air conditioning. Keep the ambient temperature of 15 ℃ ~ 30 ℃, relative humidity <85% (no condensation). Door size is less than 0.8m (if not , equipment can not enter);Best is equipped with ventilation equipment Indoor ;Cutting material may be because of the material vaporized poor health of toxic gases and odor
- Power supply: power supply capacity ≥ 2kW, depending on the user to select the laser tube power.

- Single-phase three-wire (110V/10A), should be directly connected to the protection of the earth terminal to install leakage protection switch.

- The corresponding specifications of the air switch installed in the wall over two meters away from the equipment station, height of 1.2 meters. If the local grid voltage instability or low, if necessary, with the power supply of the corresponding specifications

- Water: must use the pure water, if you can afford to use a higher cleanliness of deionized or distilled water. Prepared beforehand to meet the requirements of the water bucket of about 18 liters (for an extra pure water in order to replace)

!	The water quality will directly affect the normal use and life of the equipment, Water causes damage to the equipment is not out of warranty

- Gas Source: The standard device with a ventilation system, centrifugal fan installed in the room or in the outside to isolate the noise, but you have to prevent the fan dry in the rain. Pre-layout and exhaust dust ventilation pipe (diameter 100 mm) equipment work must ensure that there are staff on-site duty

3.4 Processing workflow

1 、Open total power switch.

2 、Open the laser power and preheating for 5 minutes before the following operation. (View outlet pipe is water or not)

3 、Running the control software, open graphics files for cutting, set the corresponding operating parameters.

4 、Place the working material , use the reset button on the control panel so that the laser head back to the starting position.

5 、The use of focus adjustment rules, adjusting focus tube up and down position according to the processing of the material thickness .

6 、Press the testing button and adjust the laser power knob so that the laser output to the appropriate value. (Note that the laser output at this time!)

7 、According to the demand to put the processed material to the appropriate location, through software or keyboard arrow keys to adjust the location of the processing range.

8 、Open exhaust and blowing switch.

9 、The operating software for laser cutting or engraving process.

10 、The processing is completed, turn off the switch of the exhaust, inflatable, laser power, scanning, total power, etc.

3.5 Processing Notes

1、Based on the processing of materials and processing way (cutting or engraving) to set the appropriate parameters, including processing speed, the laser output power, sealing the overlapping length (cutting), step space (engraving), and air-way cutting speed, etc., (see software manual)in order to achieve optimum processing results.

2、This machine 's working output 10.6μM laser wavelength , Man naked eye can not see it. Therefore, the machine works, should ensure that no objects block the entire optical path, should be careful to not allow any part of the body or highly reflective materials into the optical, to avoid unnecessary loss or injury. !

3、Processing materials must be placed flat so that focusing mirror is always in the range of processing and processing materials to maintain the same distance (focus adjustment regulation height) to ensure optimum processing results.

4、Shall not be placed objest to impede the laser heads running in the machining area in order to the stepper motor is not blocked out of step processing defects.

5、The whole process must ensure that the circulating cooling water should be at regular intervals (per hour) observation of the cooling water temperature,and replace clean water timely.

6、In processing , be sure to maintain exhaust smoothly. The smoke generated in the processing will damage the surface of optical lenses and motion institutions and affect life of machine

7、Processing should pay attention to the signal line between the equipment and the computer must be securely connected, can not hot plug connector to avoid damage to the motion control card

4. Operating instructions

4.1 Booting process

The boot process in the main operation table

- Open red (motion control) button switch.
- Keep pressing "water button" switch until lights.

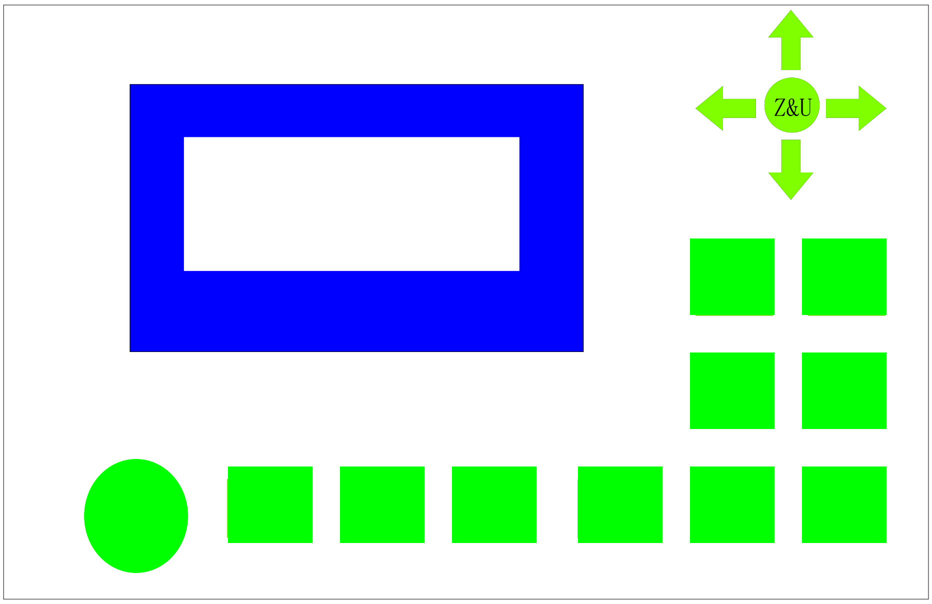
※ Pressing about five seconds till the cooling water tank to start, about 10 seconds, "WATER / cooling“ light,then release the button.

※ Check the cooling tank to start water circulation: whether the water pipe is benting; panel display of cooling water tank is normal; whether the alarm display and beep sound.

- Turn on your computer, double-click the "Core of cutting control software" icon to enter the laser engraving software.
- Press the green button switches (laser power).
- Start the vacuum fan.

4.2 Use the operating

4.2.1 Operation panle



1、Keyland touch screen

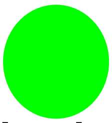
The LCD screen shown on the document name or system parameters: cutting speed, work intensity, and system state (initialization, wait, pause, etc.).

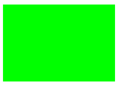
2、Explanation

Mechanical origin：On the top right of working platform, cutting has to return to this location for each power up or resetting

Cutting origin：The operator sets the starting position for the cutting,it's beginning position . The laser head is first back to the mechanical origin, and then cutting the origin of the motion to the latest definition of the operator when power-up or reset . If in device parameter settings, set the return of mechanical origin after the completion of the equipment operating or perform a reset operation, the laser head will stay in the mechanical origin

3、Each function key description:

 Reset: the laser head goes back to the mechanical origin, this key is valid when the system is in a wait or pause and invalid under other state.

 Laser:After boot device, you press this key once, the laser tube light



emitting again each time . Hold down the "Laser" button, the laser tube lights emitting up to a light in 0.5 seconds.This key is valid only in a wait or pausestate of the system in ; other state invalid

Speed: Set the cutting speed, 0% -100% optional . This key is valid in wait or pause , others are invalid. Speed 100% is Limiting speed according to machine parameter

Mini power: set the minimum power, optional 0% -100%. This key is valid in wait or pause, the other states are invalid.

Maxi light intensity: set the maximum light intensity, optional 0% -100%. This key is valid in wait or pause, the other states are invalid.

Files: view and the operator panel to load a file that runs

Start / Pause: During work and pause, switch the system state. When the system is in working condition, press this key, the system enters the suspend state;if the button is pressed again, the system goes back to work. This key is valid in work or suspend state, other states are invalid.

Origin: This key is used to define (change) cutting origin. Before to modify the cutting origin, please move the laser head to the cutting starting oposition using arrow keys:

1, Short press this key to determine the laser head location for cutting the origin;

2, if the long click the button for above 3 seconds to determine the cutting origin, and the system self-test, draw a self-test graphics.

3, This key is valid in waitting condition, other state invalid.

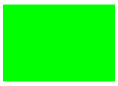
Frame: border line motion of the laser head

Exit: to cancel the operation. The abolition of the changes made when set the cutting parameters;

It will deselect when it was for choose operating documents, ;

It can make System return to waiting state when sysytem is in pause state.

Other state, "Exit" key is invalid.



Confirm: Confirm operation. It is valid for cutting speed setting and intensity, or select the operating documents;Other state is not valid.

Arrow keys (up, down, left, right, middle button Z & U): used to adjust the position of the laser head, select the operating document, change the cutting speed, minimum / maximum intensity value.



Z&U:Adjust X and Y axis motion.

4.3 Shutdown process

Shutdown process completed in the main operation board

- Press green key(laser Power)
- Close vacuum fan
- Press”water/water cooling”key,close water tank.
- Turn off the computer
- Press Red (laser power) key

5. Maintenance service

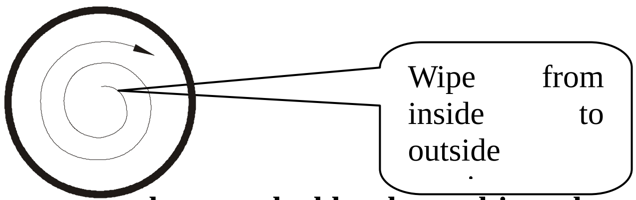
5.1 Maintenance and servicing of the optical system

- CO2 laser tube to replenish the gas or replacement of the laser tube, especially when the laser tube was working time over 1000 hours, please feel free to pay attention to the output power of the laser tube;In the same current conditions if the power is smaller you need to replace the laser tube.
- The reflectors for a long time will be processed after the resulting dust pollution, lower reflectivity, effects of laser output, must be kept clean and checked on a regular basis.You can use ethanol or special lens cleaning liquid, with wiping carefully with pledget. Note :avoid the Sharp scratch the surface of the mirror.
- Focus on the lower surface of the mirror focus lens may also be the working volatile contamination. When contaminated, will greatly affect the output of the laser. Processing must pay attention to the smoke and blowing protection, and avoid the contamination of the focusing mirror is careful cleaning if the pollution is serious can take the following steps:

1、 Remove the blowing off , the pressure ring , protective sleeve and carefully removed the focusing mirror.

2、 Use a blower to blow off the dust of the len surface

3、 Tweezers grip carefully the cotton ball dipped in ethanol or special lens cleaner and wipe from inside to the outside wipe gently in one direction (see below), each wipe , you need to replace the cotton ball, until the sewagethings gets rid



Note: not allow to rub back and forth, but can not be scratched by sharp object, due to the lens surface coated with antireflection coating, coating damage will greatly affect the laser energy output

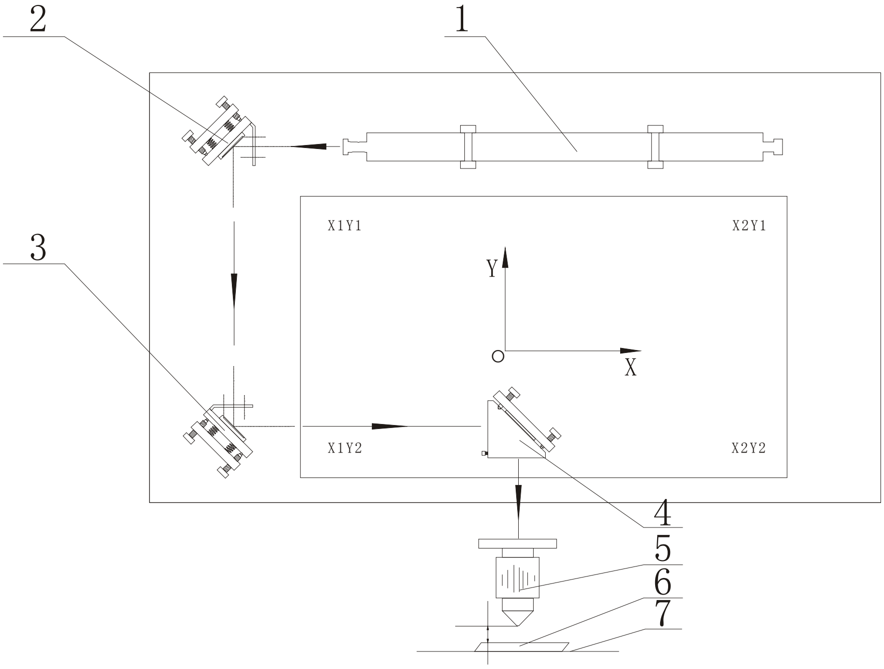
5.2Maintenance and servicing of motion organizations

- Pls keep clean of machine
- Linear guides of two-dimensional motion table need to do regular lubrication according to usage.
- Equipment chassis, laser power supply, computer power supply must begrounded well , you should regularly check the grounding screw with or without corrosion or loose, clean and tighten timely
- Moving parts such as small pulley and slide, linear guides, if contamination or corrosion, will directly affect the processing effect, should be regularly cleaned, coated with a lubricant to prevent rust on the rail
- Note that the exhaust fan port and exhaust pipe is not blocked at any time to check and remove the occluder to maintain a smooth flow.
- Cooling water to keep the clean and change them regularly. Processing should be at any time to check whether sufficient water level, water temperature is too high.

5.3Optical path adjustment and replacement of the laser tube

Ptical path adjustment

1390 series engraving machine in use, there may occur the optical path offset, resulting in the phenomenon of no light or light path errors will directly affect the processing efficiency and effects, attention should be paid. In this case, refer to the following method to the optical path is set correctly.

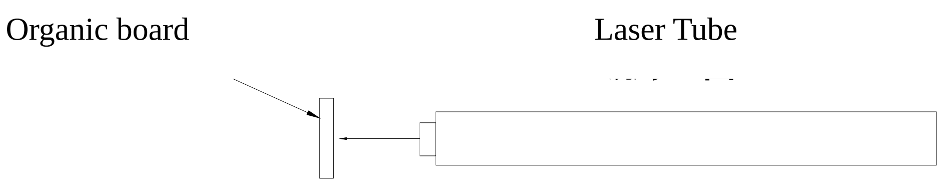


1 laser Tube 2 First reflector 3 Second reflector 4 Third reflector
5 Focus tube 6 Workpiece 7 Workpiece carrying platform

The optical system of the machine is as shown above, the adjustment of the optical system shall start from transmitter

1、**The following steps to improper operation, may emit laser damage caused by equipment or operator ,should pay particular attention!**

2、Use the testing button on the front panel (click) ,the laser output current is adjusted to the appropriate value (usually the optical power is not too large, such as 4 ~ 8mA) Note that there may be a strong laser emission, placing a transparent organic board in the front of the laser tube output window for dimming to maintain an appropriate distance to avoid laser materials to produce soot pollution output mirror. Completed, remove organic board

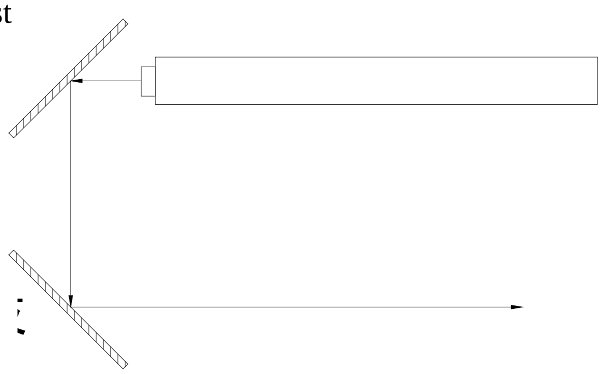


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3、A small organic board caught in the first reflector surface and fine-tune tto adjust the frame of laser tube , and used in conjunction with the test button (click), so that the laser emits completely in the first reflector and try to place the first reflector in the middle. Completed, remov organic board.

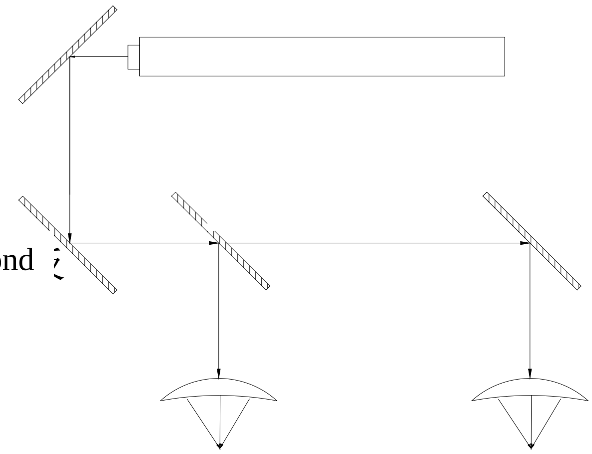


4、A small organic plate holded in the second mirror surface, fine tune the first mirror adjustment knob, and using the test button (click) makes the first launch by reflecting laser can completely on the second mirror, and as far as possible in the the middle of first mirror . Should ensure that both ends of the y axis direction receiving the laser light points coincident before and after . Completed ,remove organic plate。



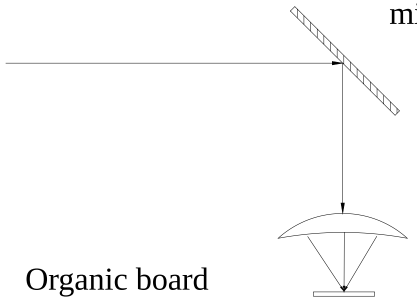
5、A small Organic board clips onto the third mirror surface, fine-tuning the second mirror adjustment knob, and uses in conjunction with the test button (click), so that the second mirror launchs reflecting the laser in the middle of the third mirrorand as far as possible . Make sure that the both ends of X axis direction receive laser spot overlap. Completed, remove organic board.

Fine-tuning the second mirror



6、Place a small organic board clips onto the top of the focusing tube, fine-tuning the third mirror adjustment knob, and use in conjunction with the test button (click), so that the third mirror launchs reflecting the laser can completely focus in laser tube as much as possible and focus on the middle of the lens (Note, smoke maybe cause pollution to the third reflective lenses ,should avoid the smoke generated by the third reflection of the lens). Completed, remove organic board.

7、Adjust the focus: to use a special regulation of the focal length . If the regulation size of the tune changes, a small organic board can be put processing platform plainly, click the Test button, fine-tune the focus tube height up and down, so that the laser point is minimum on the gasification of the organic panel , and fix focus lens barrel . The focal length of tone regulation is placed between the tube and the organic board, adjust the height then fix it . It can be used & put focus simply between the mirror and the workpiece .。



8、The above adjustments will directly affect the processing effect , pls repeatedly adjust carefully

5.4Thermostatic water-cooled machine maintenance and servicing

- Regularly clean and replace laser chiller water per week.



!	Water quality will directly affect the normal use and life of the equipment, Water causes damage to the equipment is not out of warranty

5.5Exhaust Fan and vacuum pipe maintenance and servicing

- Regular cleaning of internal dust of Exhaust Fan and vacuum pipe internal dust per three month

6 . Common problems and solutions

6.1 The main equipment part

!	Please operate the following adjustments under the guidance of our technical staff

- Fault phenomenon: Turn the key switch, nothing happens

Fault	Solution
Total power switch is closed	Close the power switch
Power is plugged in or not	Cheak it
The power switch is damaged	Pls contact with us

- Fault phenomenon：Weak laser or no laser output; Engraving depth is not enough

Fault	Solution
Laser focus length is change or not	Carefully adjust the correct focal length
Optical path shift	Adjust optical path
Focusing mirror pollution	Clean it
Reflector lens pollution	Clean it
Cooling water circulation in circulation	Clear it
Damage or aging of the laser tube	Replace laser tube
Laser power damage	Replace laser power

- Fault phenomenon：Cutting / engraving depth is unsatisfactory

Fault	Solution
Laser power settings are not normal	Setting normal laser power
Cutting/engraving parameter is not effect	Set suitable parameter
The laser output becomes weaker	Set suitable parameter

- Fault phenomenon:Cutting /engraving size 's error or malfunction

Fault	Solution
Signal line is not working properly	Replace signal line
Machine and the computer grounding is not normal	Good grounding equipment and computers
The computer operating system failure or virus infection	Computer system organize
Application software is not working properly	Reinstall the software and driver software of motion control card
An unstable power supply or interfering signals	Installation of the regulator or eliminate interference signal
Processing program to write incorrect	Check written processing procedures, to modify until their normal

- The run effect is not ideal

Fault	Solution
Rail pollution or rust	Clean rails and add Lubricating oil
Pollution of Slider and pulley	Clean them
Transmission belt is loose	Adjust
Synchronized drive wheel loose or worn out	Cheak ,ajust it

6.2 Thermostatic water-cooled machine part

- Fault phenomenon：The boot without power

Fault	Solution
Power line ‘s contact is not good	Cheak power plug
Insurance tube fuse	Cheak it and replace

- Fault phenomenon：Flow alarm

Fault	Solution
Water tank water level is too low	Check the water level, adding recycling water,check waterways for leaks
Cooling water pipes bending clogging waterways	Check the water pipe is flat.or note

- Fault phenomenon：Water temperature ultra-high

Fault	Solution
Dustproof net congestion, the poor heat dissipation	Clean regularly
The air inlet poor ventilation	Ensure the open entrances and exits
Low voltage serious or unstable	To improve the circuit or use voltage regulator
The Chiller switching machine frequently	Ensure sufficient cooling time
Excessive thermal loading	Reduce the thermal loading or use bigger cooling capacity models

- Fault phenomenon：Room temperature for ultra-high alarming

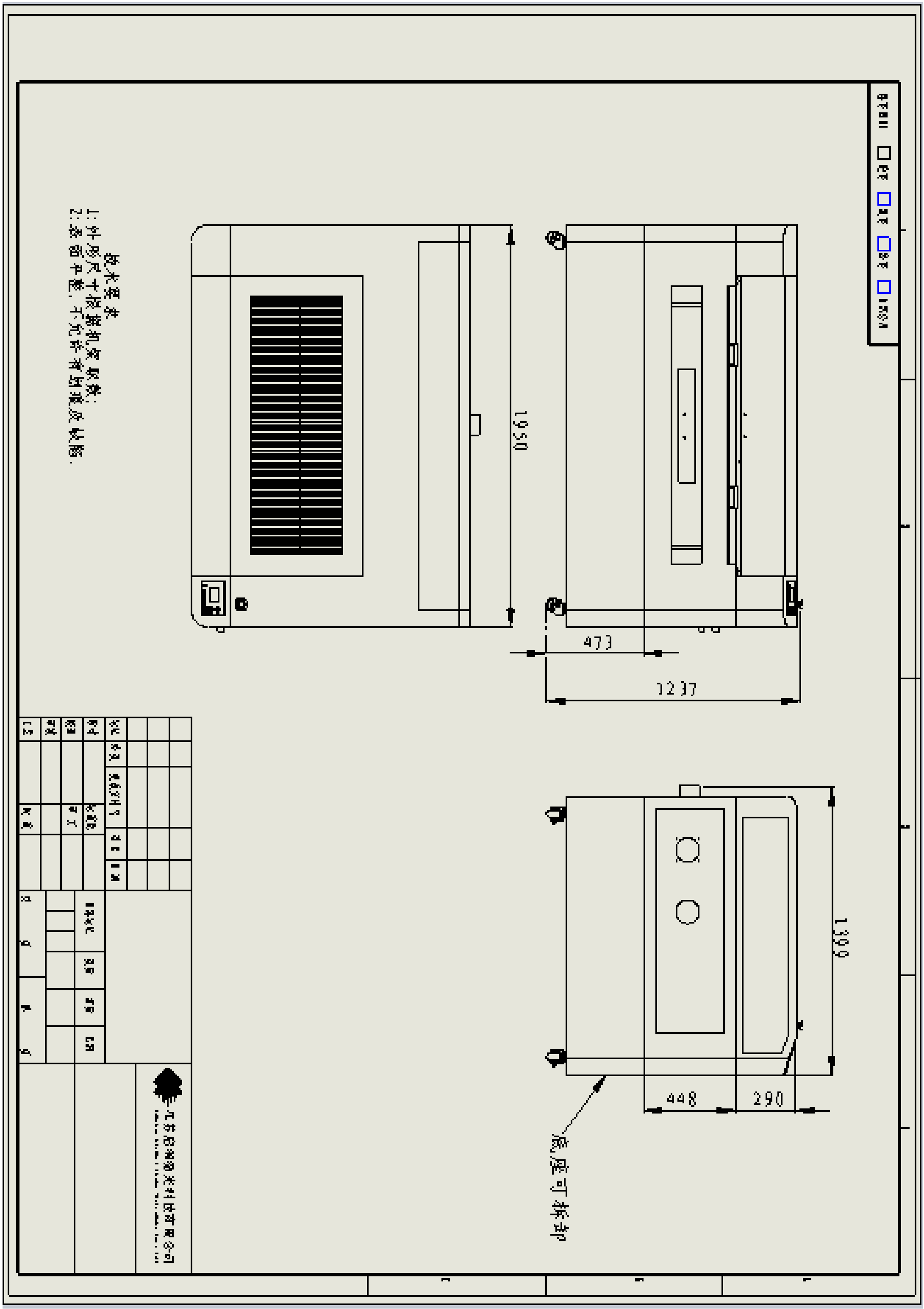
Fault	Solution
The cooling water using the high environmental temperature	Improve ventilation, to ensure that the chiller operating environment below 40 degrees

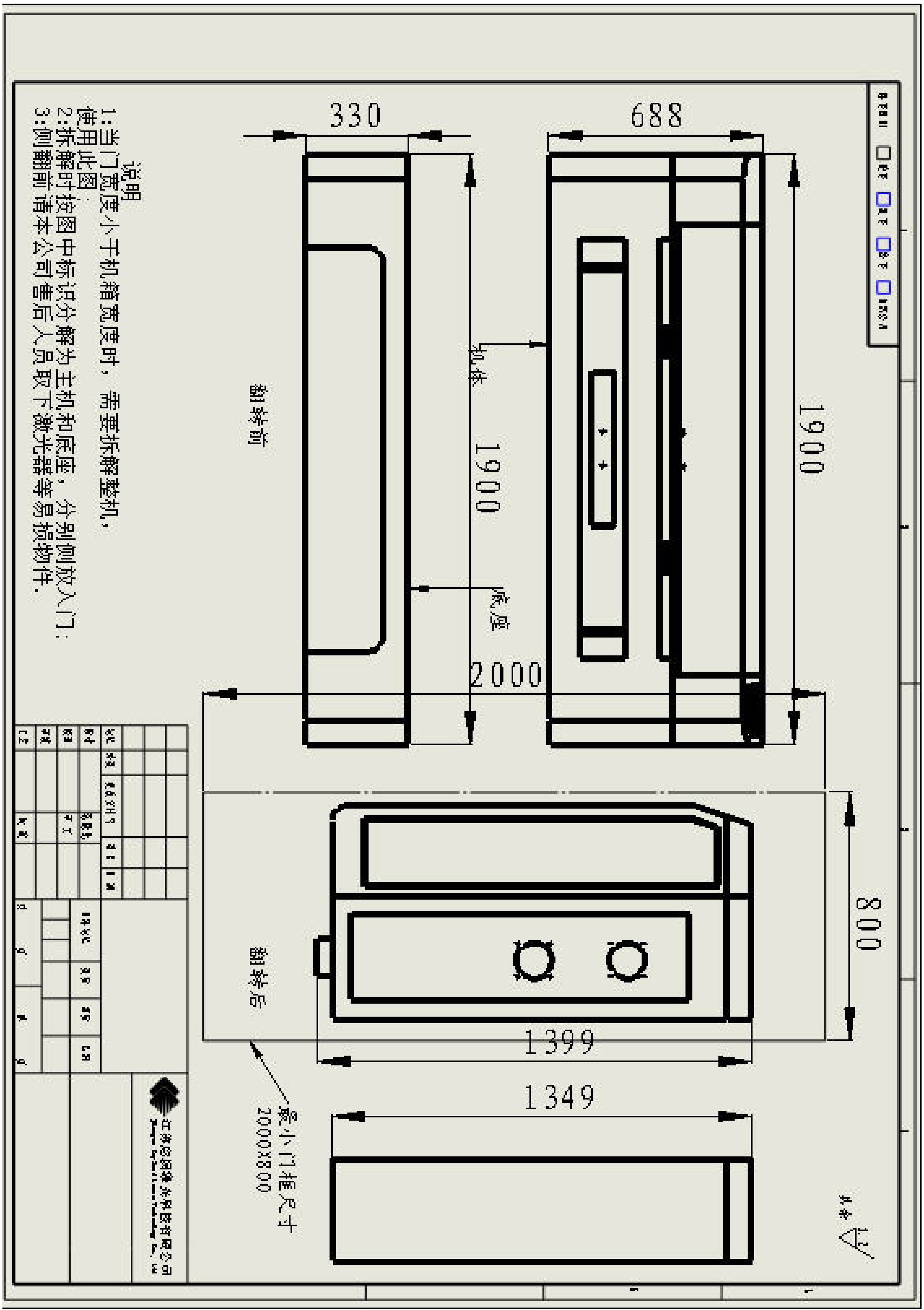
- Fault phenomenon：When changing the water, outfall drainage is slow

Fault	Solution
Water inlet is not open	Open it

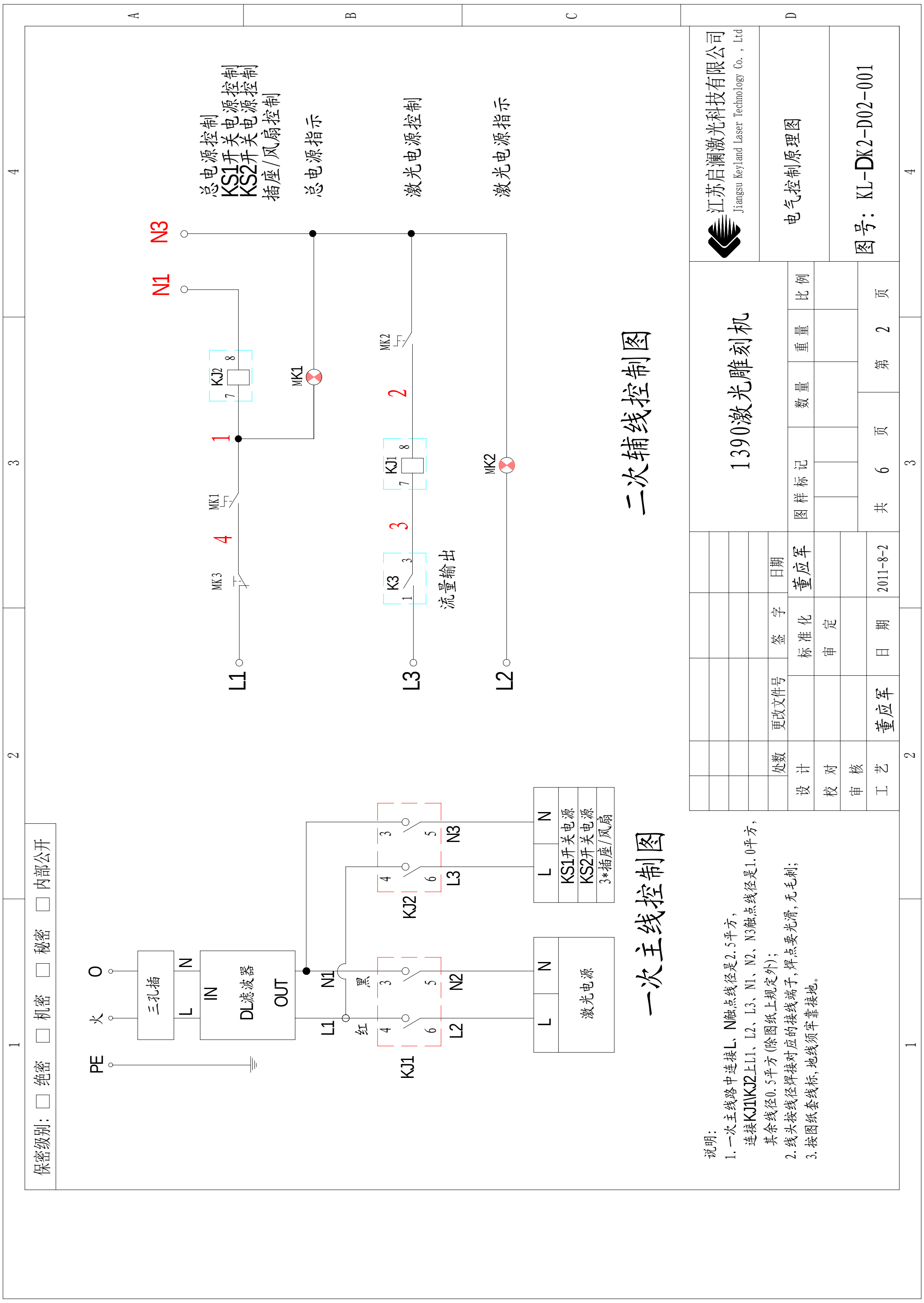
7 . Drawings

7.1 Outline Drawing

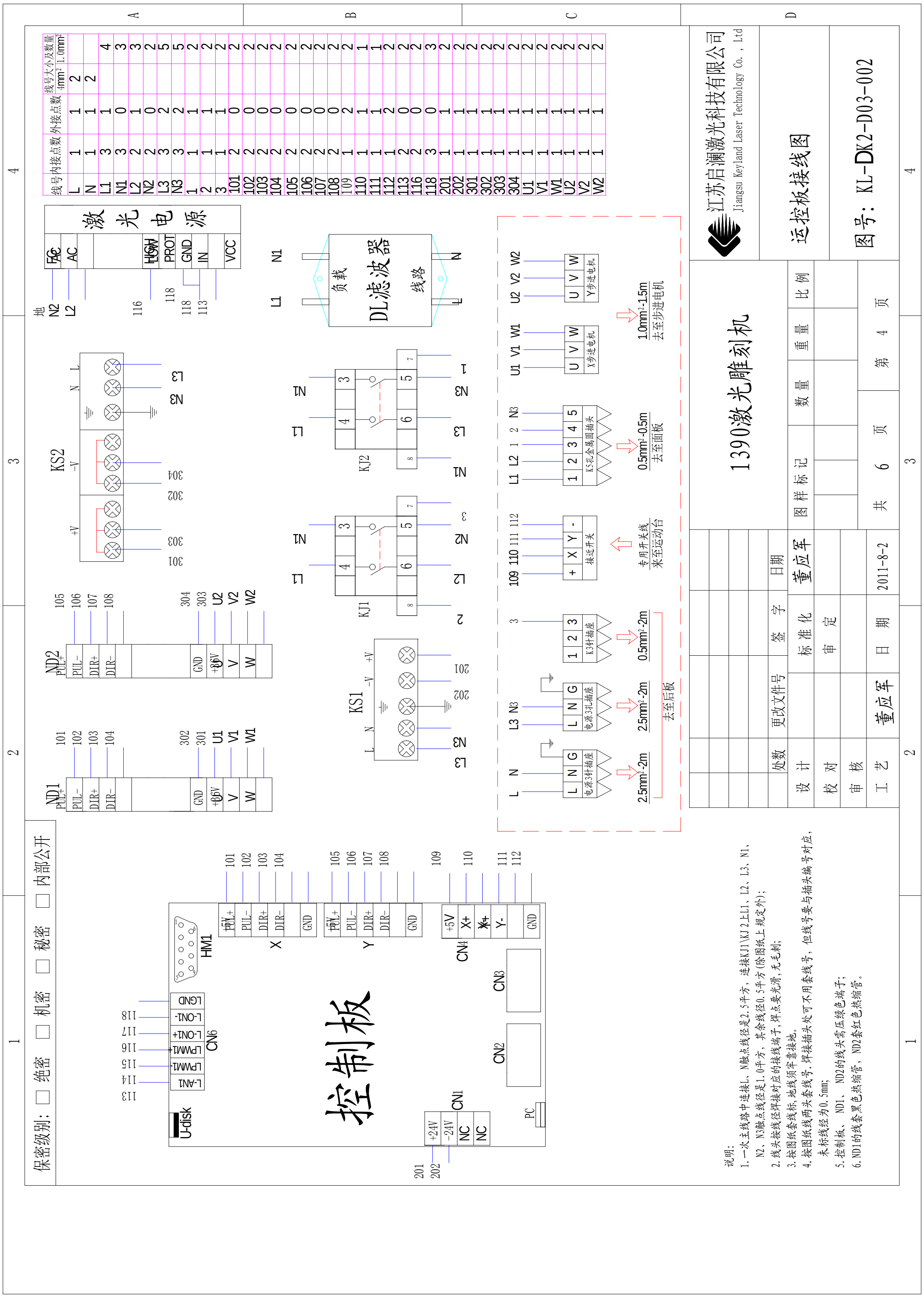



说明
1:当门宽度小于机箱宽度时，需要拆解整机，
使用此图:
2:拆解时按图中标识分解为主机和底座，分别侧放入门;
3:侧翻前请本公司售后人员取下激光器等易损物件。
330
688
机体
1900
1900
底座
2000
翻转前
800
翻转后
1399
1349
最小门框尺寸
2000X800

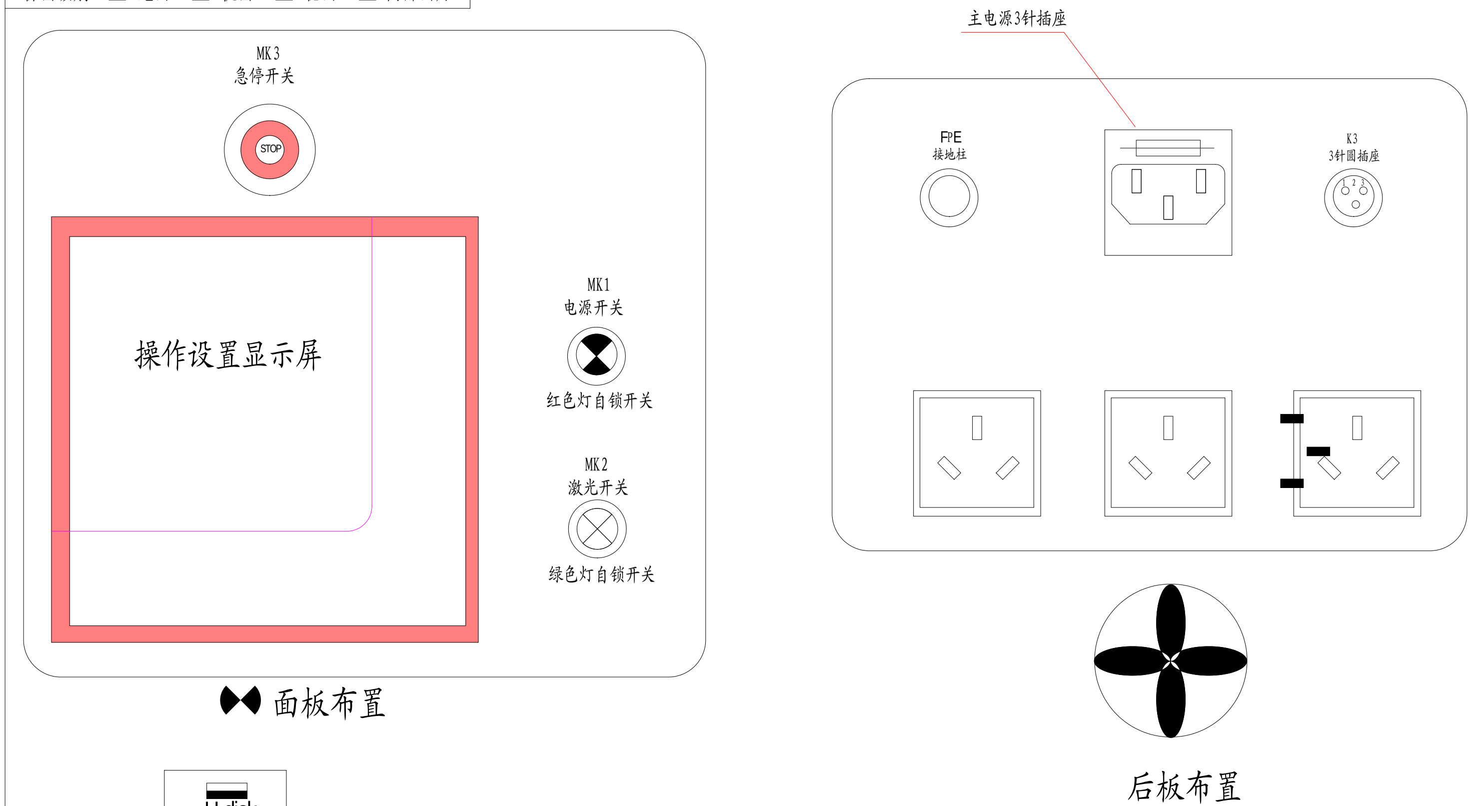
7.2 Electrical schematic

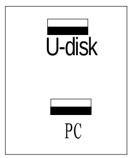


7.3 Electrical wiring diagram


江苏启澜激光科技有限公司
Jiangsu Keyland Laser Technology Co., Ltd
运控板接线图
图号: KL-DK2-D03-002
1390激光雕刻机
董应军
2011-8-2
共 6 页 第 4 页
控制板
激光电源
DL滤波器
保密级别: 绝密 机密 秘密 内部公开
说明:
1.一次主线路中连接L、N触点线径是2.5平方，连接KJ1\KJ2上L1、L2、L3、N1、N2、N3触点线径是1.0平方，其余线径0.5平方(除图纸上规定外);
2.线头接线径焊接对应的接线端子,焊点要光滑,无毛刺;
3.按图纸套线标,地线须牢靠接地,
4.按图纸线两头套线号,焊接插头处可不用套线号,但线号要与插头端号对应,未标线径为0.5mm;
5.控制板、ND1、ND2的线头需压绿色端子;
6.ND1的线套黑色热缩管，ND2套红色热缩管。

保密级别：☐ 绝密 ☐ 机密 ☐ 秘密 ☐ 内部公开





USB外接口

说明：
1.面板/后板元器件安装时要保护好表面，固定要牢固；
2.面板/后板元件按图纸布置，不能有划伤。

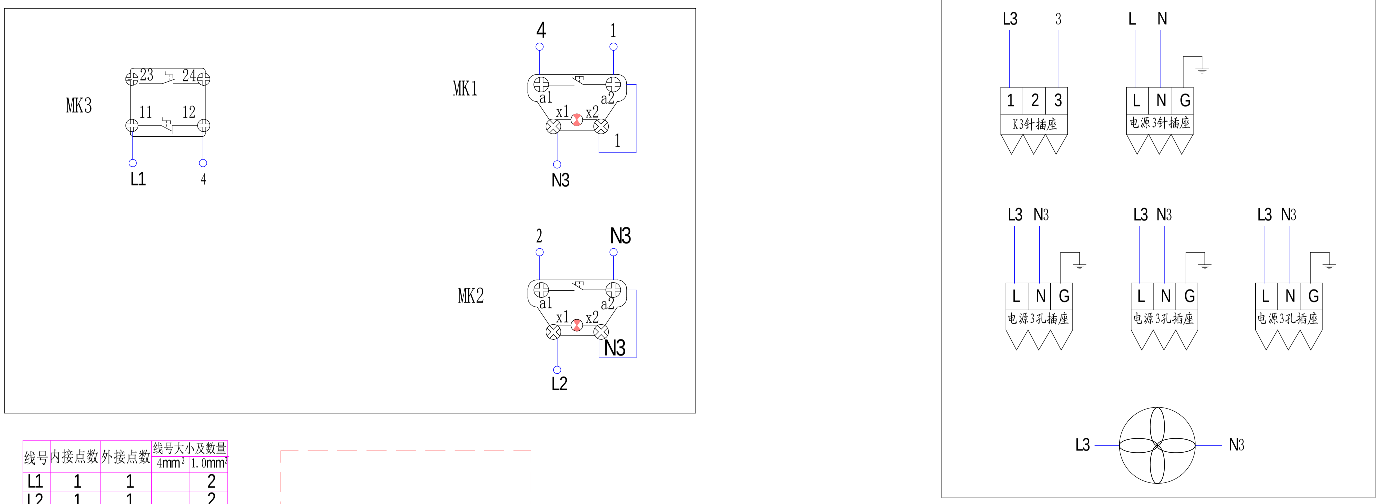
处数	更改文件号	签字	日期	1390激光雕刻机			
设计		标准化	董应军	图样标记	数量	重量	比例
校对		审定					
审核							
工艺	董应军	日期	2011-6-10	共 6 页		第 5 页	

江苏启澜激光科技有限公司
Jiangsu Keyland Laser Technology Co., Ltd

面板/后板示意图

图号：KL-DK2-D04-001

保密级别: ☐ 绝密 ☐ 机密 ☐ 秘密 ☐ 内部公开

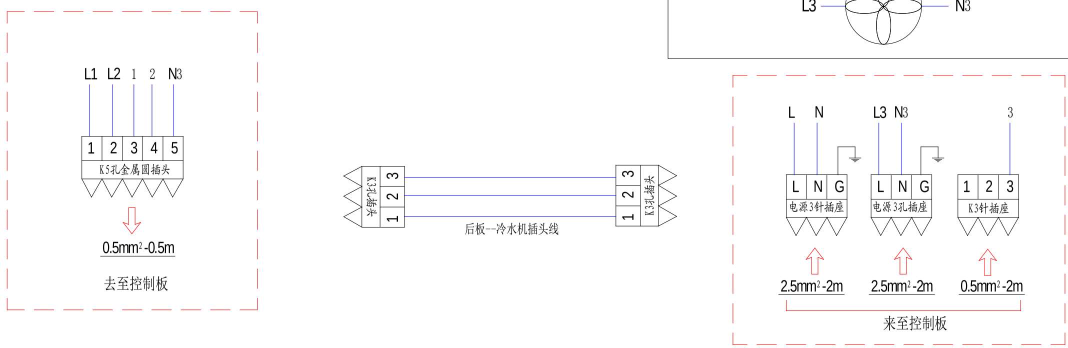


线号	内接点数	外接点数	线号大小及数量 4mm²	1.0mm²
L1	1	1		2
L2	1	1		2
N3	3	1		4
1	2	1		2
2	1	1		2
4	2	0		2

面板接线端子

线号	内接点数	外接点数	线号大小及数量 4mm²	1.0mm²
L	1	1	2	
N	1	1	2	
L3	5	1		5
N3	4	1		5
3	1	1		2

后板接线端子



说明:
1.后板线路中连接L、N触点线径是2.5平方，连接插座上L3、N3触点线径是1.0平方，其余线径0.5平方(除图纸上规定外)，面板连接线径0.5平方;
2.线头按线径焊接对应的接线端子,焊点要光滑,无毛刺;
3.按图纸套线标,地线须牢靠接地。

处数	更改文件号	签 字	日期	
设 计		标 准 化	董应军	
校 对		审 定		
审 核				
工 艺	董应军	日 期	2011-8-2	

1390激光雕刻机

图 样 标 记			数 量	重 量	比 例
共 6 页			第 6 页		

江苏启澜激光科技有限公司
Jiangsu Keyland Laser Technology Co., Ltd

面板/后板接线图

图号: KL-DK2-D04-002

8 . Consumable wearing parts

8.1 Laser tube

When the laser power decay gradually and can not cut normally. After the exclusion of other factors, you need to replace the laser tube.



8.2 Optical Lens

The optical lens is contaminated, the laser will damage the coating layer of lens . Should be replaced at this time. The machine includes three reflective lenses and a focusing lens.

9. Sftware Operation Manual

9.1 Software Introduction

The software of 1390 series laser engraving machine is for the small-format series laser engraving machine, is designed to develop application software. The software interface is friendly, functional, and easy to use .

9.2 The installation of the software program

Please check attachment

9.3 Software Operation

Please check attachment